Emerging Challenges in Hip Fracture Care

Day 1 Mobilisation: How to Achieve It?

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Overview

- **Registry** info
- General Hip fracture **stats**
- **The M word (mobilisation)**
- Day 1 walking **Vs** standing
- **Challenges** to day 1 walking
- **Facilitating** day 1 walking

Registries

- NZOA joint registry
  - Hip and Knee Joint registry - 1997
  - unicompartmental knee, ankles, elbow, shoulder, Lx, Cx - 2000’s
  - ACL registry - 2015

ANZHFR

Australian & New Zealand Hip Fracture Registry

- 2014
- In 2018 started using the hospital names
  - improved transparency
  - Improved individual hospital performance
- Must be over 50 yo
- Minimal mechanical trauma
  - -fall from standing height

Benefits of a registry?

- Economic value – return up to $7 in healthcare savings for every $1 spent on the registry[3]
- Improved quality of care
- Trends identified
- Expectations
- Incentive
- Research

2022

NEW ZEALAND HOSPITALS

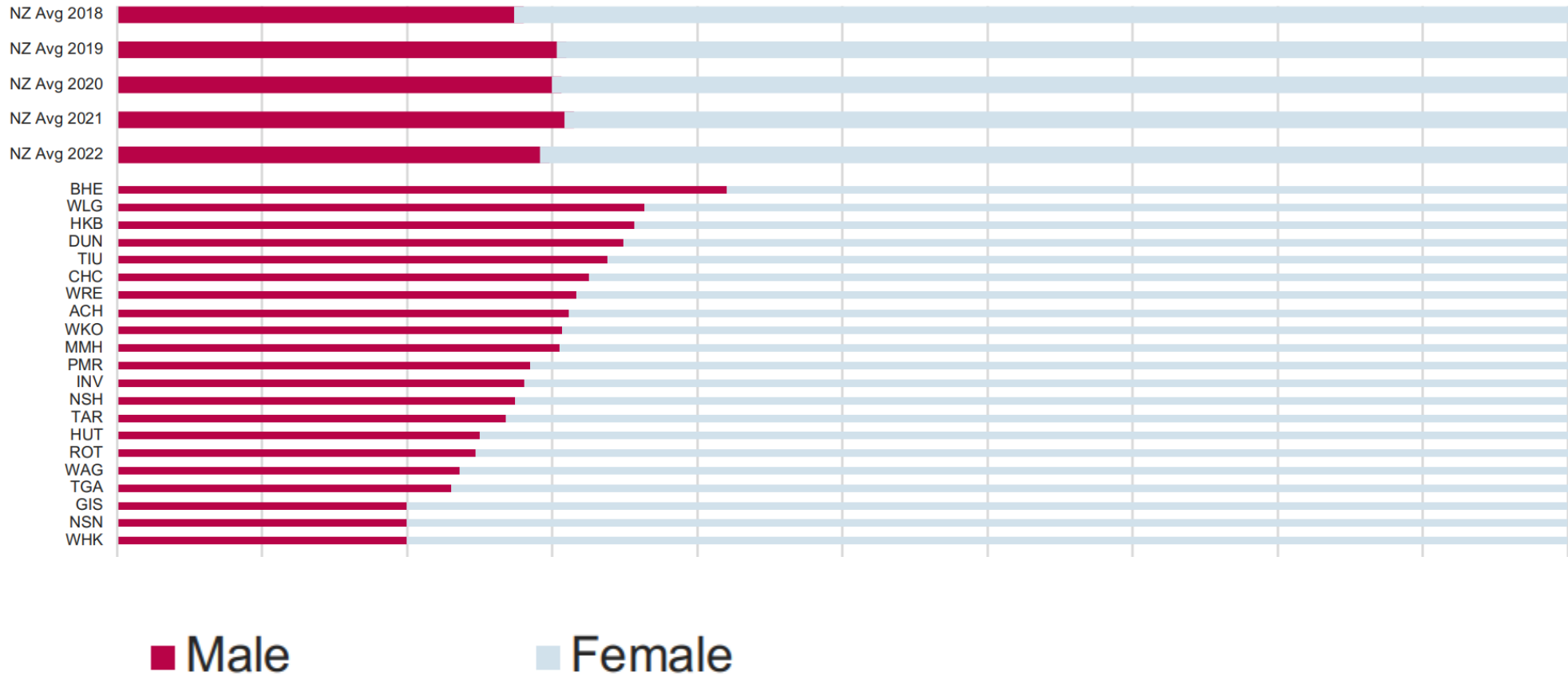
	REPORT ID	2022
Auckland City Hospital	ACH	264
Christchurch Hospital	CHC	489
Dunedin Hospital	DUN	167
Gisborne Hospital	GIS	30
Hawkes Bay Hospital	HKB	126
Hutt Hospital	HUT	112
Middlemore Hospital	MMH	269
Nelson Hospital	NSN	111
North Shore Hospital	NSH	430
Palmerston North Hospital	PMR	161
Rotorua Hospital	ROT	89

	REPORT ID	2022
Southland Hospital	INV	90
Taranaki Base Hospital	TAR	123
Tauranga Hospital	TGA	191
Timaru Hospital	TIU	68
Waikato Hospital	WKO	355
Wairau Hospital	BHE	50
Wellington Hospital	WLG	22
Whakatane Hospital	WHK	35
Whanganui Hospital	WAG	55
Whangarei Hospital	WRE	142

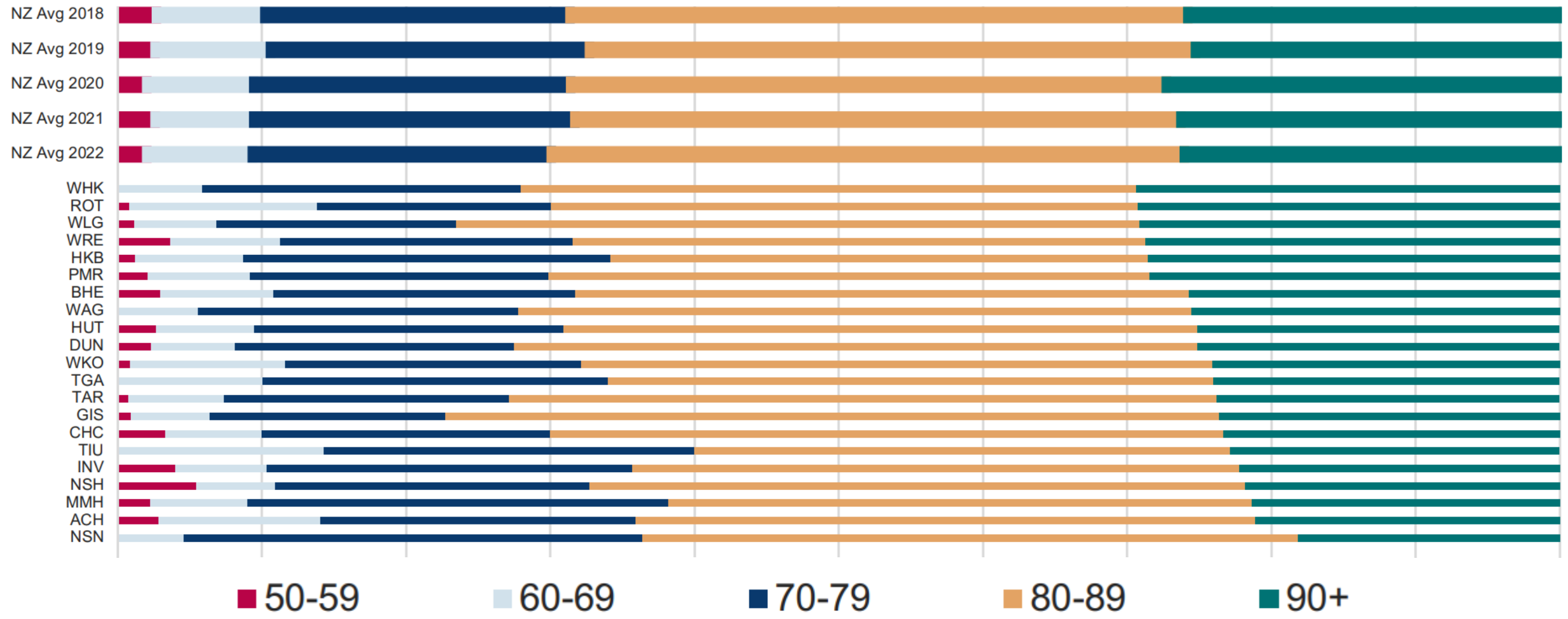
Female:Male 70:30

FIGURE 2 Sex

Females comprised 70% of New Zealand and 66% of Australian hip fracture patients, respectively.



Age at admission (ave 83)



Usual place of residence
Home: ARC 70:30

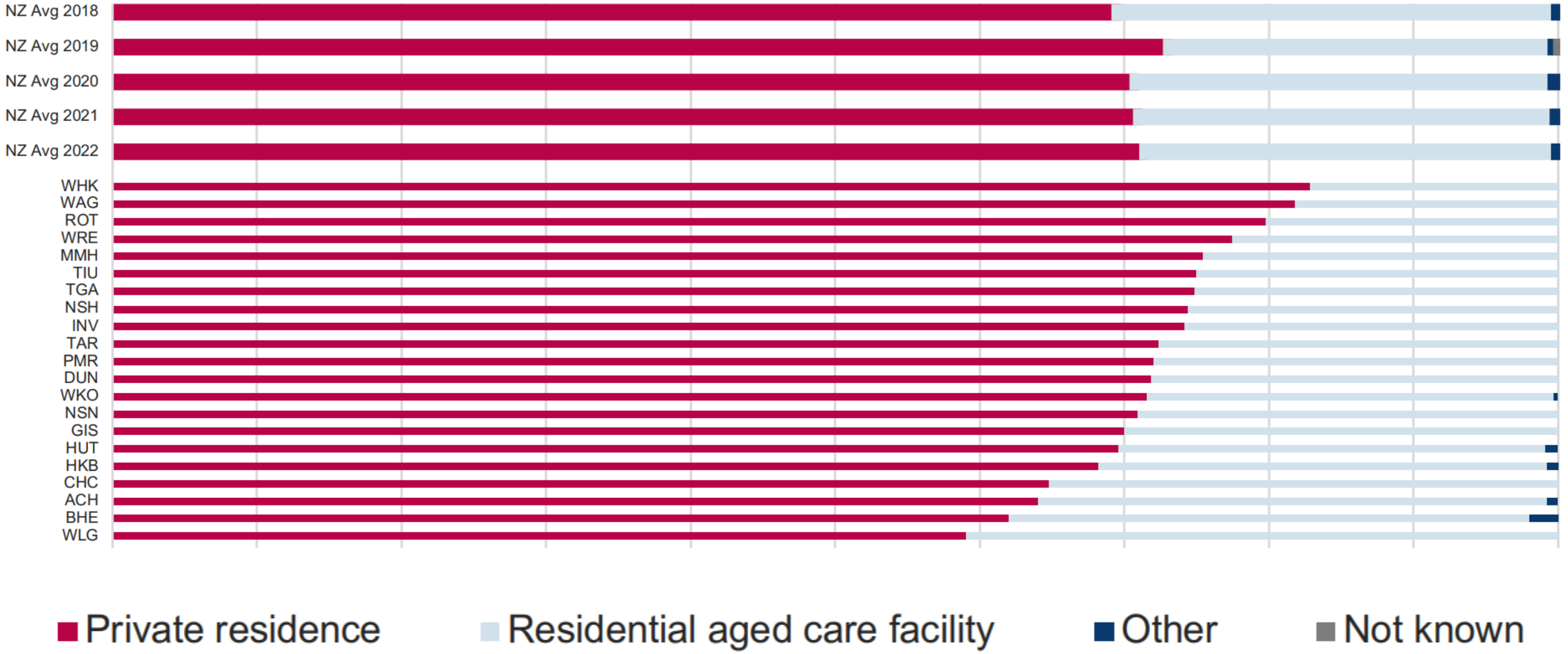


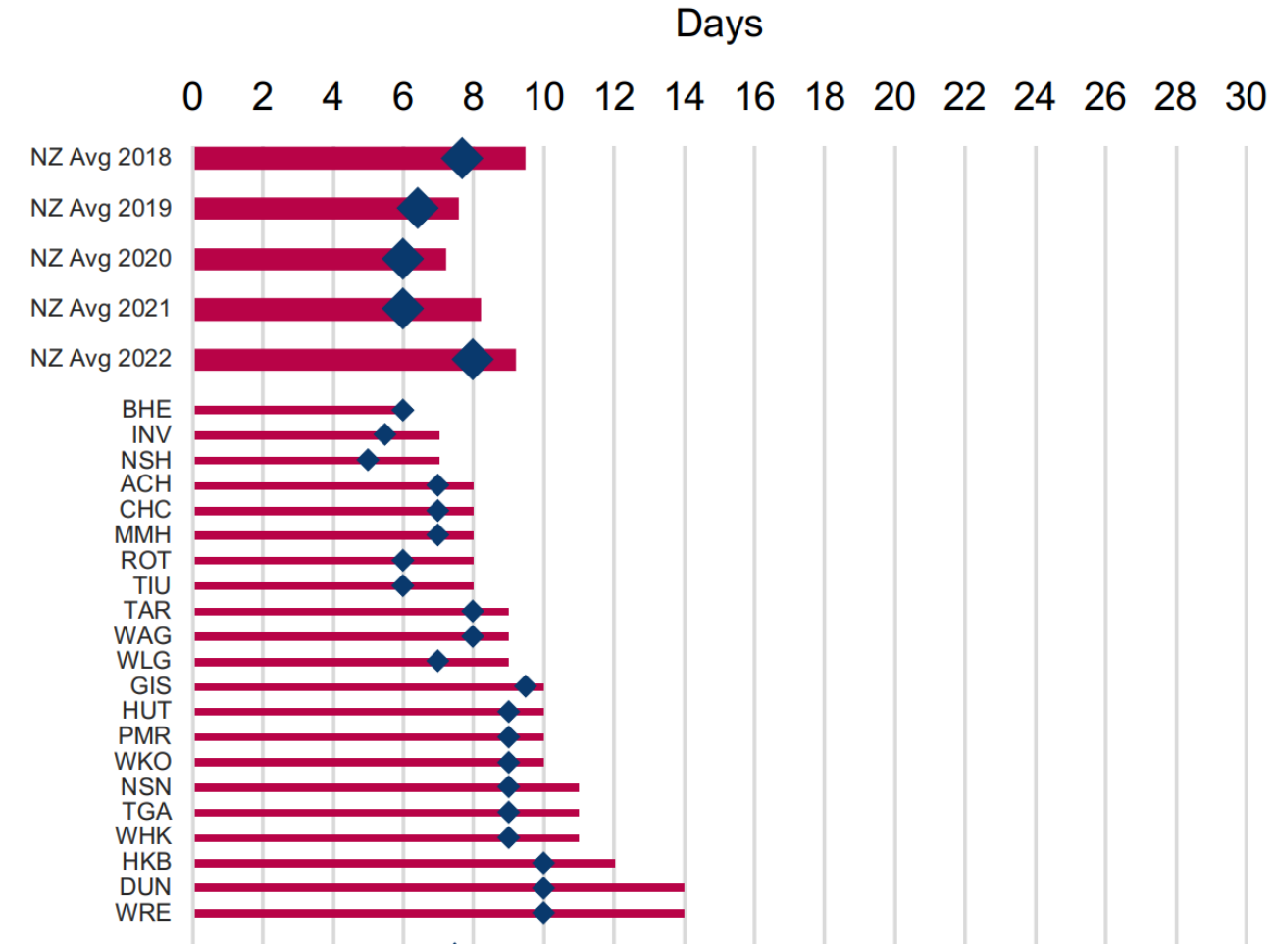
FIGURE 108

Average length of stay (LOS) in acute ward

FIGURE 109

Discharge to rehabilitation

The median LOS in the acute ward in New Zealand was 8 days and 49% of patients were transferred to rehabilitation. In Australia, the median length of stay in the acute ward was 8 days and 42% were transferred to rehabilitation. There has been a decrease in the proportion of patients transferred to rehabilitation.



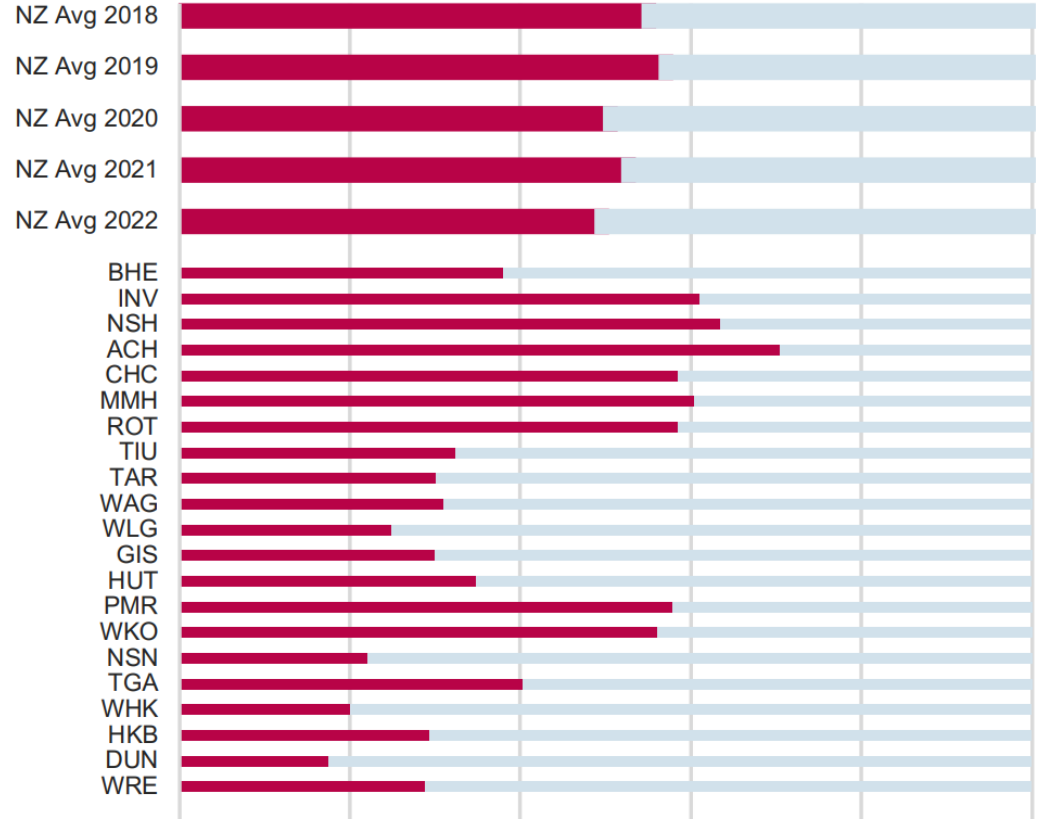


Figure 7 – Preadmission walking ability

Prior to admission, 45% of hip fracture patients in New Zealand and 46% in Australia walked without a walking aid.

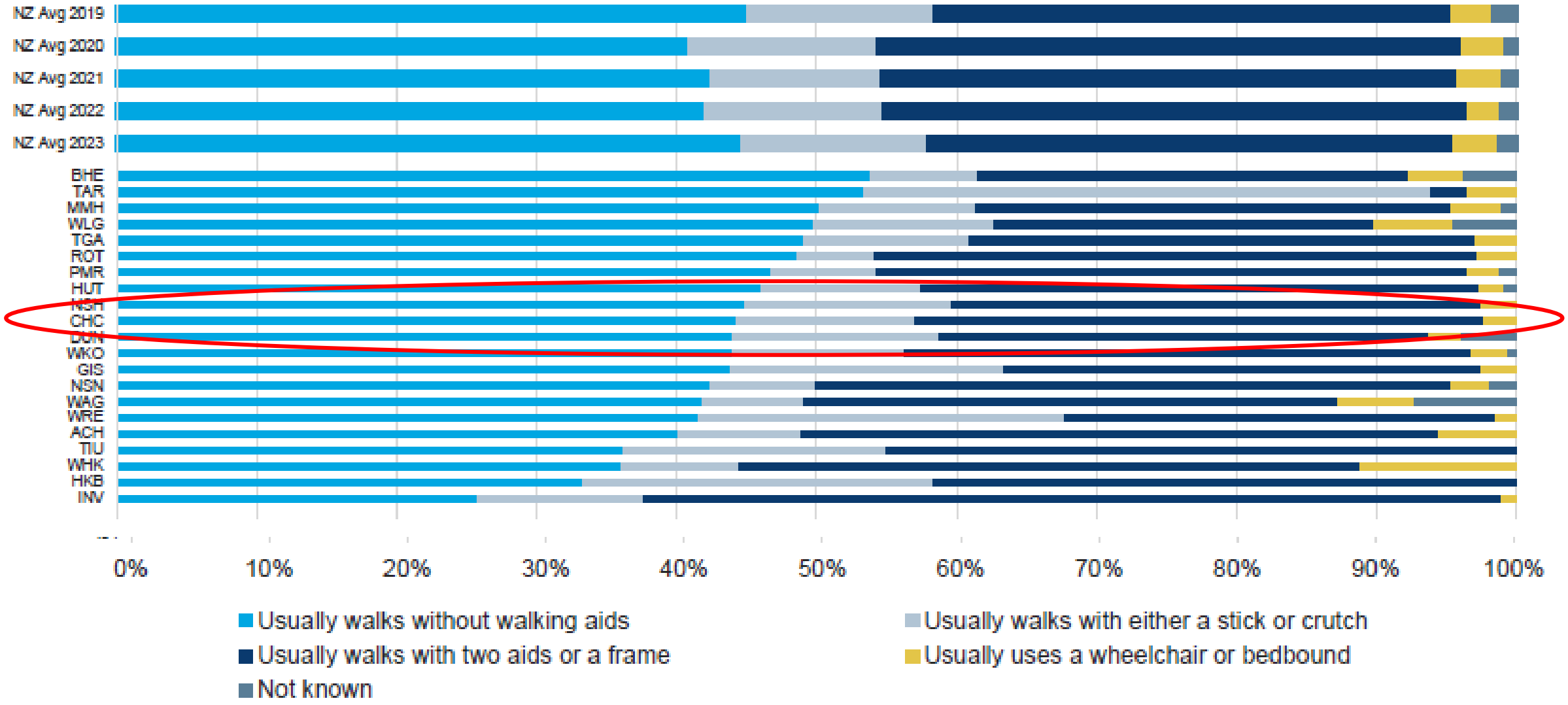
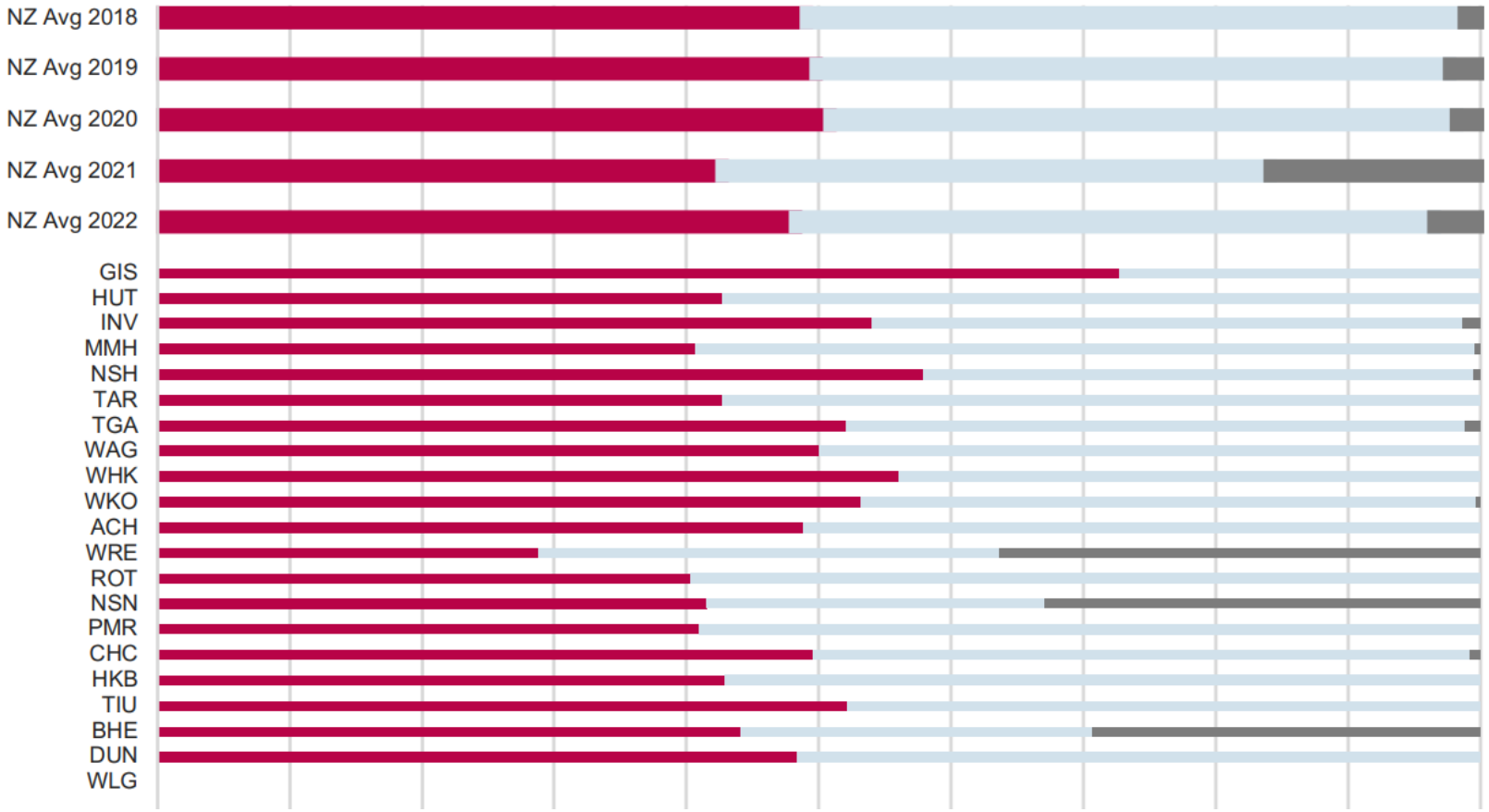


FIGURE 137

Return to pre–fracture mobility at 120 days



Where follow-up was completed, 48% of patient's in New Zealand and 44% of patients in Australia reported a return to their pre-fracture mobility at 120 days (Figure 137).

- Returned to pre-fracture mobility at 120 days
- Not returned to pre-fracture mobility at 120 days
- Not known

The M word

Figure 80 – Opportunity for first day mobilisation

Ninety percent of hip fracture patients in New Zealand and 94% in Australia were given the opportunity to mobilise the day after surgery, reflecting an increase in both countries.

Clinical Care Standards

Clinician Fact Sheet:

Hip Fracture Care

The goal of the Hip Fracture Care Clinical Care Standard is to improve the assessment and management of patients with a hip fracture to optimise outcomes and reduce their risk of another fracture.

Clinicians and health services can use this Clinical Care Standard to support the delivery of high quality care.

UNDER THIS CLINICAL CARE STANDARD

Care at presentation

A patient presenting to hospital with a suspected hip fracture receives care guided by timely assessment and management of medical conditions, including diagnostic imaging, pain assessment and cognitive assessment.

Pain management

A patient with a hip fracture is assessed for pain at the time of presentation and regularly throughout their hospital stay, and receives pain management including the use of multimodal analgesia, if clinically appropriate.

Orthogeriatric model of care

A patient with a hip fracture is offered treatment based on an orthogeriatric model of care as defined in the *Australian and New Zealand Guideline for Hip Fracture Care*.

Timing of surgery

A patient presenting to hospital with a hip fracture, or sustaining a hip fracture while in hospital, receives surgery within 48 hours, if no clinical contraindication exists and the patient prefers surgery.

Mobilisation and weight-bearing

A patient with a hip fracture is offered mobilisation without restrictions on weight-bearing the day after surgery and at least once a day thereafter, depending on the patient's clinical condition and agreed goals of care.

Minimising risk of another fracture

Before a patient with a hip fracture leaves hospital, they are offered a falls and bone health assessment, and a management plan based on this assessment, to reduce the risk of another fracture.

Transition from hospital care

Before a patient leaves hospital, the patient and their carer are involved in the development of an individualised care plan that describes the patient's ongoing care and goals of care after they leave hospital. The plan is developed collaboratively with the patient's general practitioner. The plan identifies any changes in medicines, any new medicines, and equipment and contact details for rehabilitation services they may require. It also describes mobilisation activities, wound care and function post-injury. This plan is provided to the patient before discharge and their general practitioner and other ongoing clinical providers within 48 hours of discharge.

More information on the Clinical Care Standards program is available from the Australian Commission on Safety and Quality in Health Care website at **www.safetyandquality.gov.au/ccs**

Variable Number	4.11
Variable	**First day mobilisation**
Variable Name	mobil
Definition	Was the patient with a hip fracture provided with the opportunity to be mobilised on day one post hip fracture surgery?
Justification	Hip Fracture Care Clinical Care Standard Indicator 5a. Low mobility during hospitalisation is associated with death, and declining function in activities of daily living at discharge and at one month follow-up, which induces a risk of staying dependent in these activities (Pedersen et al. 2013).
Format	1 digit numeric
Status	Core
Coding Source	Adapted from the UK National Hip Fracture Database
Coding Frame	0 Patient given opportunity to start mobilising day 1 post surgery 1 Patient not given opportunity to start mobilising day 1 post surgery 9 Not known
DD Comments	Day 1 post-surgery means the next calendar day following the day of the patient's primary surgery for hip fracture. Mobilised means the patient was sat out of bed and given the opportunity to start mobilising on day 1 post hip fracture surgery. Mobility may include getting in/out of bed, standing up from a chair, and/or walking. Patients who have been given the opportunity to mobilise but are determined by the clinical team to be too unwell to mobilise are included provided both the opportunity to mobilise and the clinical determination are documented in the medical record. Patients that have declined to mobilise are included provided both the opportunity to mobilise and the reason for declining are documented in the medical record.

Pedersen MM, Bodilsen AC, Petersen J, Beyer N, Andersen O, Lawson-Smith L, et al. 2013. Twenty-four-hour mobility during acute hospitalization in older medical patients. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences 68(3):331-7.

2021 report “Actual first day mobilisation”

Hip Fracture Clinical Care Standard

Quality statements

1 **Care at presentation**
A person presenting to hospital with a suspected hip fracture receives care that is guided by timely assessment and management of medical conditions, including cognition, pain, nutritional status and frailty. Arrangements are made according to a locally endorsed hip fracture pathway.

2 **Pain management**
A person with a hip fracture is assessed for pain at the time of presentation to the emergency department and regularly throughout their acute admission. Pain management includes appropriate multimodal analgesia and nerve blocks, unless contraindicated.

3 **Orthogeriatric model of care**
A person with a hip fracture is offered treatment based on an orthogeriatric model of care as defined in the *Australian and New Zealand Guideline for Hip Fracture Care*. A coordinated multidisciplinary approach is used to identify and manage malnutrition, frailty, cognitive impairment and delirium.

4 **Timing of surgery**
A person with a hip fracture receives surgery within 36 hours of their first presentation to hospital.

5 **Mobilisation and weight bearing**
A person with a hip fracture is mobilised without restrictions on weight bearing, starting the day of, or the day after, surgery, and at least once a day thereafter, according to their clinical condition and agreed goals of care.

6 **Minimising risk of another fracture**
Before a person leaves hospital after a hip fracture, they receive a falls and bone health assessment and management plan, with appropriate referral for secondary fracture prevention.

7 **Transition from hospital care**
Before a person leaves hospital after a hip fracture, an individualised care plan is developed that describes their goals of care and ongoing care needs. This plan is developed in discussion with the person and their family or support people. The plan includes mobilisation activities and expected function post-injury, wound care, pain management, nutrition, fracture prevention strategies, changed or new medicines, and specific rehabilitation services and equipment. On discharge, the plan is provided to the person and communicated with their general practice and other ongoing clinicians and care providers.

5 Quality statement 5 – Mobilisation and weight bearing

A person with a hip fracture is mobilised without restrictions on weight bearing, starting the day of, or the day after, surgery, and at least once a day thereafter, according to their clinical condition and agreed goals of care.

Purpose

To restore movement and function following injury and to reduce postoperative complications.

What the quality statement means

For patients

The aim of hip fracture surgery is to allow you to get up and put weight through your leg straight away.[37] Either the day of your surgery or the day after, you will be encouraged to sit out of bed and start putting as much weight through your leg as is comfortable, unless there are good reasons for you not to. It is common to feel some pain or weakness when you start walking. Starting to move early will prevent you from losing your strength and mobility, and help you regain your independence sooner. It will also help to avoid serious complications such as pneumonia, clots in the legs, pressure injuries to the skin, and delirium.[37]

If you are spending long periods in bed or in a chair without moving, you are at risk of developing a pressure injury (bedsore). Your risk of getting a pressure injury will be assessed regularly and you will be provided with the right kind of equipment (like a mattress and/or cushion) and advice on moving about to relieve the pressure.

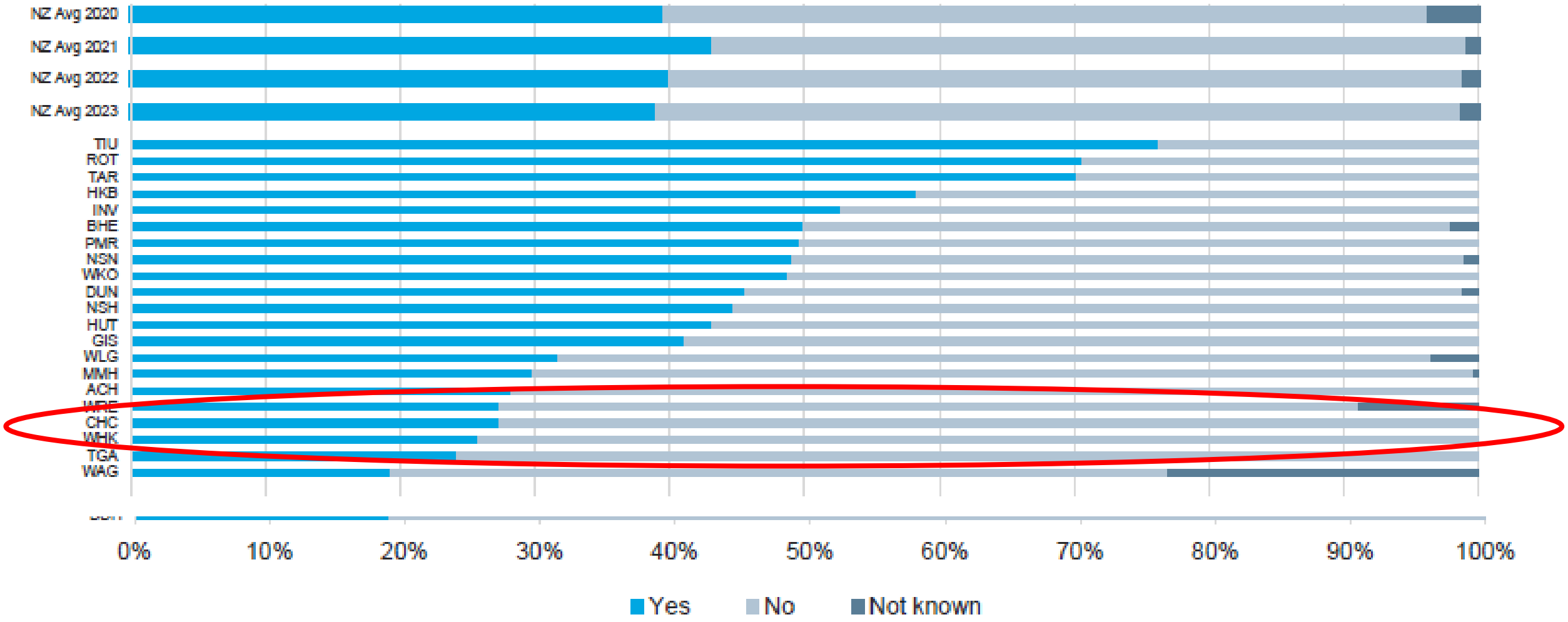
For clinicians

Improving mobility after a hip fracture is key to recovery. Mobilise patients the day of, or the day after, hip fracture surgery, and at least once a day thereafter unless contraindicated.[1,5] Mobilised means the person manages to stand and step transfer out of bed onto a chair or commode, or walk.[19] Allow patients to bear weight as tolerated, but avoid weight bearing if there is a clinical concern about the fracture, the fixation or the likelihood of healing.[38]

Additional exercises, such as training of gait, balance and functional tasks can further improve patient outcomes.[53] For people with conditions preventing mobilisation, arrange for tailored advice from a physiotherapist or occupational therapist.[5]

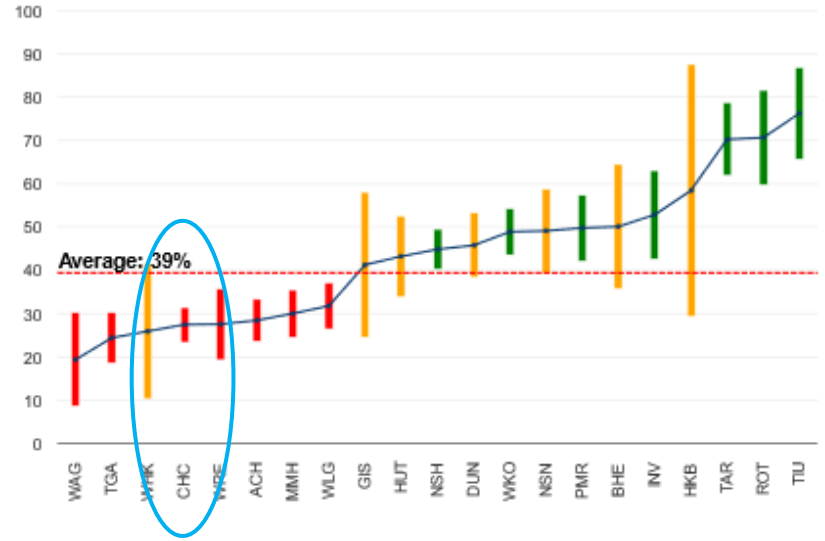
For people at risk of pressure injuries, conduct comprehensive skin inspections and provide pressure injury prevention and care in accordance with best-practice guidelines, including implementing a mattress support surface to meet individualised requirements.[54]

Figure 83 – First day walking



Indicator 5a: Proportion of patients with a hip fracture who are mobilised on day one post hip fracture surgery

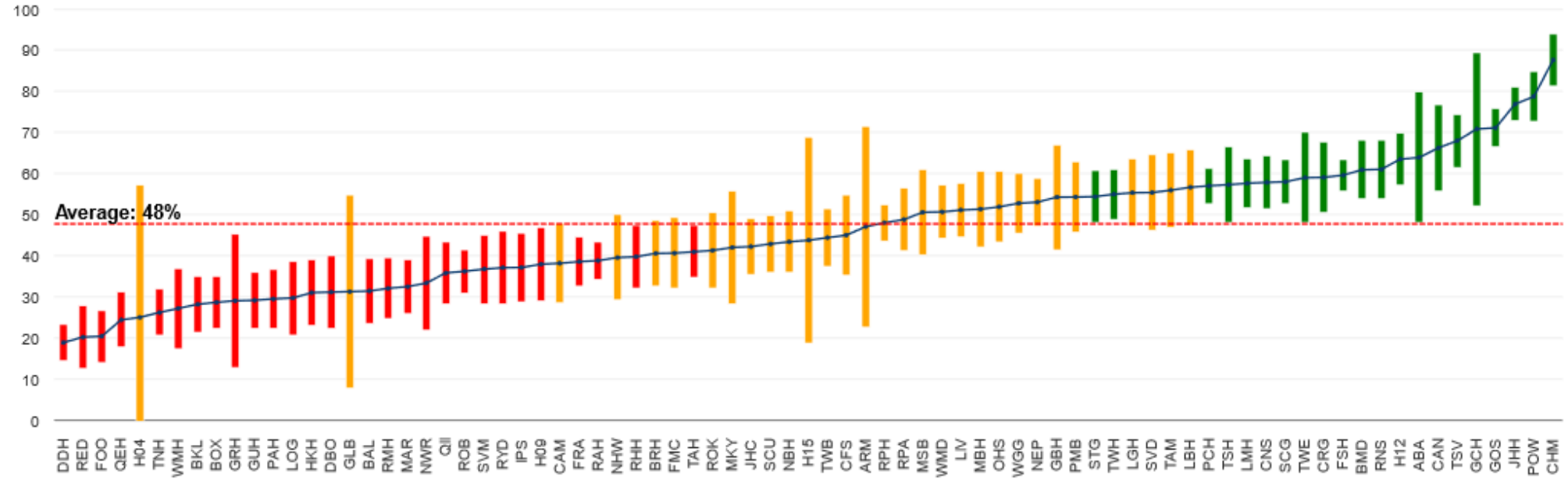
Figure 17 – First day walking: New Zealand



Thirty-nine percent of patients in New Zealand (Figure 17) and 48% of patients in Australia (Figure 18) achieved first day walking.

This means they managed to stand and step transfer out of bed onto a chair/commode or walk. It does not include ~~only~~ sitting over the edge of the bed or standing up from the bed without stepping/walking.

Figure 18 – First day walking: Australia



Royal College of Physicians | FFFAP

National Hip Fracture Database

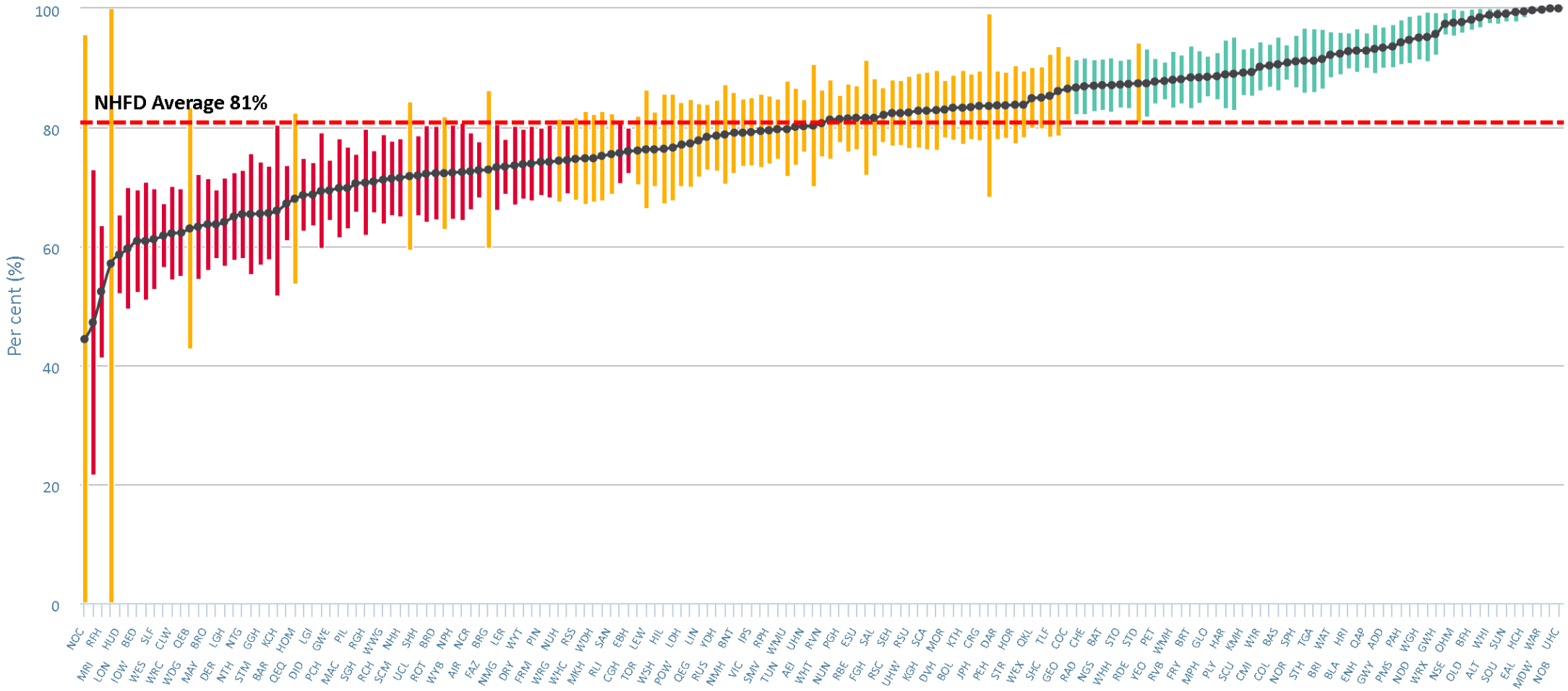
National Falls and Fragility Fracture Audit Programme (FFFAP)

Search: enter a hospital name, address or postcode... 2023

About | Using charts | FAQs

KPI 4 - Prompt mobilisation (All NHFD Hospitals 2023)

Mobilised out of bed (standing or hoisted) by the day after hip fracture operation.



All 27 | Physio 4 | Time 4 | Patient 4

Popular Recent 27 questions

Anonymous
13 minutes ago
16

Why did the registry decide on day 1 WALKING and not other wording that includes sit to stand/Sara stedy, sitting on edge of bed after mobilisation offered??

Anonymous
1 hour ago
14

Is there a preferred frailty assessment tool in the new standards?

Anonymous
2 hours ago
13

My hosp's weekend physio only covers joints replacement, if NOF gets plate or nail, not covered/seen. What evidence out there th
the weekend effect on outcome

Ask

Popular Recent 27 questions

Anonymous
13 minutes ago

16

Why did the registry decide on day 1 WALKING and not other wording that includes sit to stand/Sara stedy, sitting on edge of bed after mobilisation offered??

ANZHFR

Australian & New Zealand Hip Fracture Registry

SPRINT AUDIT RESULTS

ACUTE REHABILITATION

The Acute Rehabilitation Sprint Audit aimed to identify initial post-operative rehabilitation practices across Australia and New Zealand to better understand care in the acute setting. In 2022, 36 facilities across Australia and New Zealand completed the audit and provided information on 437 hip fracture patients.

WHAT HAPPENED TO DIFFERENT PATIENTS IN THE AUDIT?

AUSTRALIA

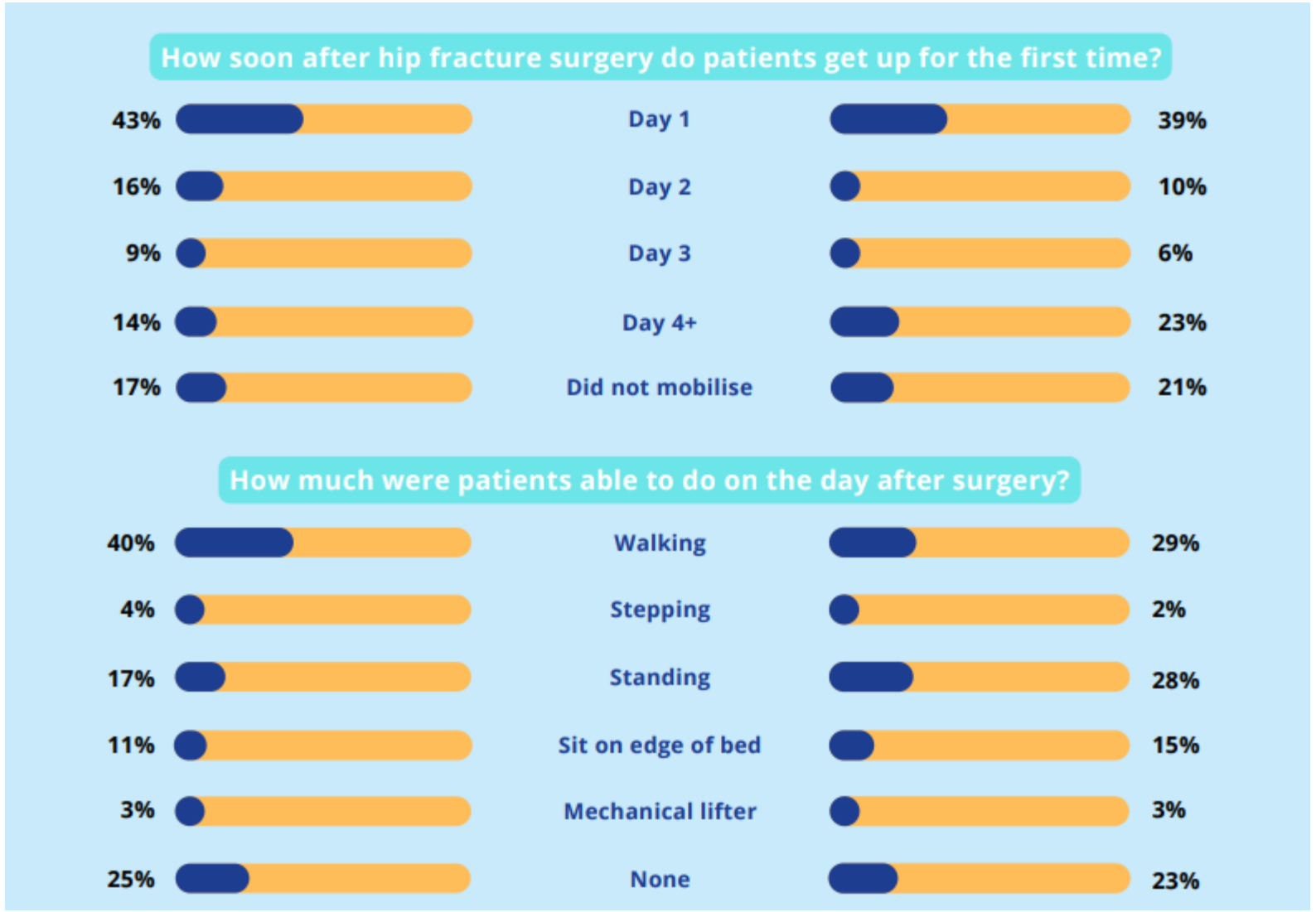
NEW ZEALAND

339 patients

98 patients

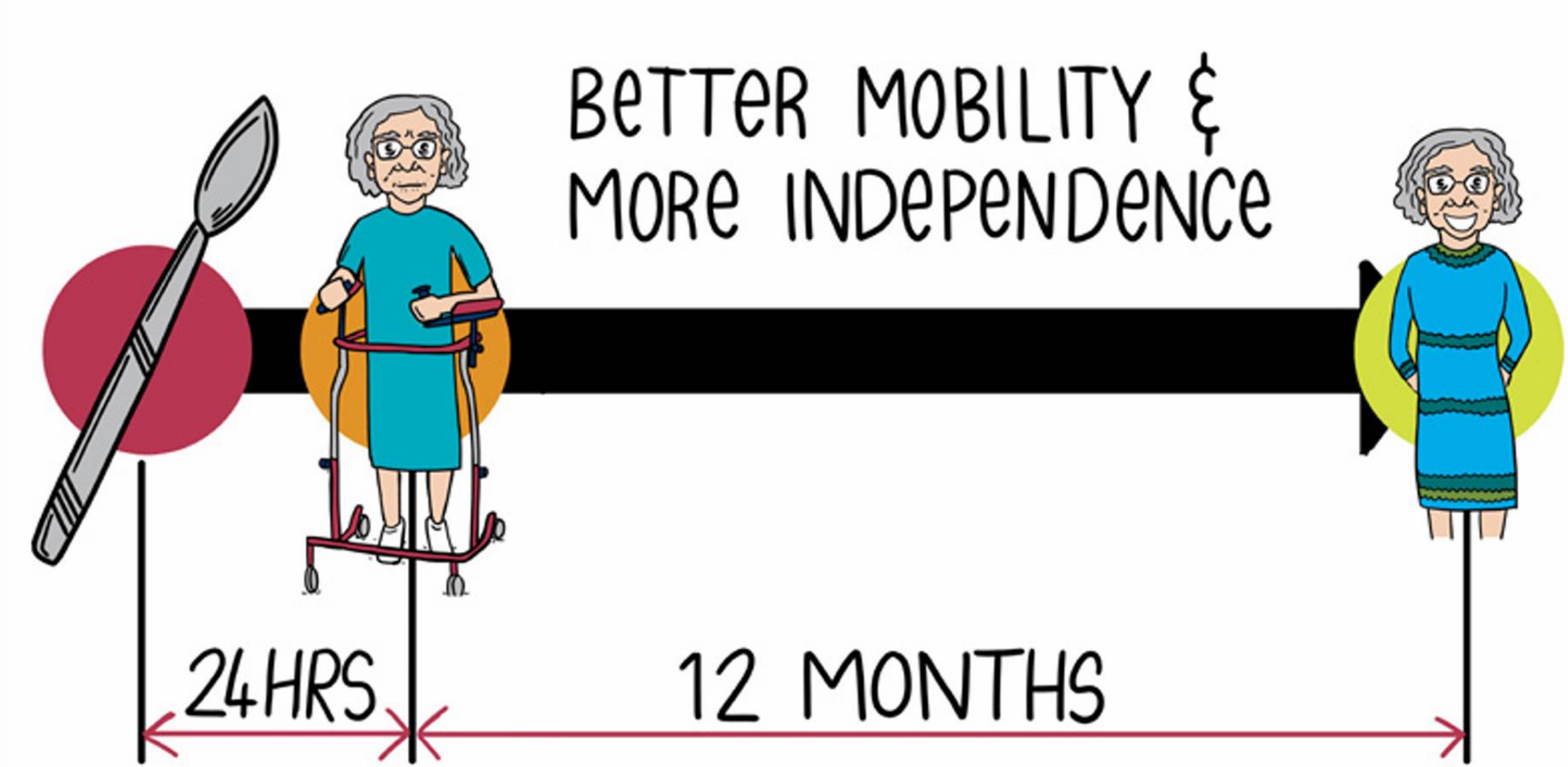
Who tries to help patients get up on the day after surgery?

Australia		New Zealand
56%	Physio only	41%
9%	Physio with nursing/other	13%
1%	Nursing or other	12%
34%	Did not attempt to mobilise day 1	33%


How soon after hip fracture surgery do patients get up for the first time?
43%
Day 1
39%
16%
Day 2
10%
9%
Day 3
6%
14%
Day 4+
23%
17%
Did not mobilise
21%
How much were patients able to do on the day after surgery?
40%
Walking
29%
4%
Stepping
2%
17%
Standing
28%
11%
Sit on edge of bed
15%
3%
Mechanical lifter
3%
25%
None
23%


Is there extra help from allied health assistants?
62%
Extra exercise sessions
86%
59%
Extra walking sessions
86%
10%
Extra education and information
57%
14%
No allied health assistant support
0%
21%
Other
0%
Which patients will routinely get physiotherapy at a weekend?
48%
Everyone
14%
48%
Only patients on the day after surgery
71%
41%
Unable to get up on the day after surgery
43%
48%
Require physio to facilitate discharge
29%
34%
At risk of deterioration without physio
0%
3%
Other
14%

Day 1 Walking Vs Standing



Siminiuc *et al. BMC Geriatrics* (2024) 24:629
https://doi.org/10.1186/s12877-024-05206-8

BMC Geriatrics

RESEARCH Open Access

Rehabilitation after surgery for hip fracture – the impact of prompt, frequent and mobilisation-focused physiotherapy on discharge outcomes: an observational cohort study

Daniel Siminiuc[1], Oya Gumuskaya[1], Rebecca Mitchell[2], Jack Bell[3], Ian D. Cameron[4], Jamie Hallen[5], Karen Birkenhead[1,6], Sarah Hurring[7], Brett Baxter[8], Jacqueline Close[5,9], Katie J. Sheehan[10], Antony Johansen[11], Mellick J. Chehade[12], Catherine Sherrington[13,14], Zsolt J. Balogh[15], Morag E. Taylor[5] and Mitchell Sarkies[1,2,6*]

Early Ambulation After Hip Fracture Surgery Is Associated With Decreased 30-Day Mortality

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Sara M. Putnam, MD
Elizabeth R. Lyden, MS
Matthew A. Tao, MD

ABSTRACT

Introduction: Hip fractures frequently present in complicated patients and are fraught with high morbidity and mortality rates. Postoperatively, delayed ambulation has been identified as a factor associated with increased mortality, although its magnitude has yet to be quantified. Therefore, this article aims to evaluate mortality after hip fracture surgery because it relates to early postoperative ambulation, taking into account preexisting comorbidity burden.

Methods: This is a retrospective review of patients older than age 65 years who underwent surgical fixation for hip fractures because of a low-energy mechanism. Ambulation during the first 3 postoperative days was recorded along with age and preexisting comorbidity burden (Modified 5-Factor Frailty Index), and 30-day and 1-year mortality statuses were examined. Multivariable logistic regression was used to analyze the association between postoperative ambulation and mortality.

Results: Of 485 patients initially identified, 218 met the inclusion criteria. Overall mortality rates were 6.4% at 30 days and 18.8% at 1

■ TRAUMA

The 30-day survival and recovery after hip fracture by timing of mobilization and dementia

A UK DATABASE STUDY

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Aims

The aim of this study to compare 30-day survival and recovery of mobility between patients mobilized early (on the day of, or day after surgery for a hip fracture) and patients mobilized late (two days or more after surgery), and to determine whether the presence of dementia influences the association between the timing of mobilization, 30-day survival, and recovery.

Methods

Analysis of the National Hip Fracture Database and hospital records for 126,897 patients aged ≥ 60 years who underwent surgery for a hip fracture in England and Wales between 2014 and 2016. Using logistic regression, we adjusted for covariates with a propensity score to estimate the association between the timing of mobilization, survival, and recovery of walking ability.

Results

A total of 99,667 patients (79%) mobilized early. Among those mobilized early compared to those mobilized late, the weighted odds ratio of survival was 1.92 (95% confidence interval (CI) 1.80 to 2.05), of recovering outdoor ambulation was 1.25 (95% CI 1.03 to 1.51), and of recovering indoor ambulation was 1.53 (95% CI 1.32 to 1.78) by 30 days. The weighted probabilities of survival at 30 days post-admission were 95.9% (95% CI 95.7% to 96.0%) for those who mobilized early and 92.4% (95% CI 92.0% to 92.8%) for those who mobilized late. The weighted probabilities of regaining the ability to walk outdoors were 9.7% (95% CI 9.2% to 10.2%) and indoors 81.2% (95% CI 80.0% to 82.4%), for those who mobilized early, and 7.9% (95% CI 6.6% to 9.2%) and 73.8% (95% CI 71.3% to 76.2%), respectively, for those who mobilized late. Patients with dementia were less likely to mobilize early despite observed associations with survival and ambulation recovery for those with and without dementia.

Conclusion

Early mobilization is associated with survival and recovery for patients (with and without dementia) after hip fracture. Early mobilization should be incorporated as a measured indicator of quality. Reasons for failure to mobilize early should also be recorded to inform quality improvement initiatives.

Research Article

Walking Greater Than 5 Feet After Hip Fracture Surgery Is Associated With Fewer Complications, Including Death

Richard J. VanTienderen, DO
Isaac Fernandez, MD
Michael S. Reich, MD
Mai P. Nguyen, MD

ABSTRACT

Introduction: Hip fractures in the elderly are associated with notable morbidity. The influence of postoperative ambulation on outcomes is not well described. We hypothesized that patients who mobilize faster after surgical intervention would demonstrate fewer postoperative complications.

Methods: A retrospective review was performed on patients with hip fractures from October 2015 through September 2017. All ambulatory patients at least 65 years old (y/o), with a low-energy mechanism of injury, and who underwent surgical treatment were included. Physical therapy notes were used to track postoperative ambulation, and medical records were reviewed for 90-day postoperative complications.

Results: One hundred sixty-three patients were included (64 femoral neck, 88 intertrochanteric, and 11 subtrochanteric fractures). Eighty

ANZ J. Surg. 2006; **76**: 607–611 doi: 10.1111/j.1445-2197.2006.03786.x

ORIGINAL ARTICLE

NO REST FOR THE WOUNDED: EARLY AMBULATION AFTER HIP SURGERY ACCELERATES RECOVERY

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Background: Level 3 evidence-based guidelines recommend first walk after hip fracture surgery within 48 h. Early mobilization is resource and effort intensive and needs rigorous investigation to justify implementation. This study uses a prospective randomized method to investigate the effect of early ambulation (EA) after hip fracture surgery on patient and hospital outcomes.

Methods: Sixty patients (41 women and 19 men; mean age 79.4 years) admitted between March 2004 through December 2004 to The Alfred Hospital, Melbourne, for surgical management of a hip fracture were studied. Randomization was either EA (first walk postoperative day 1 or 2) or delayed ambulation (DA) (first walk postoperative day 3 or 4). Functional levels on day 7 post-surgery, acute hospital length of stay and destination at discharge were compared.

Results: At 1 week post-surgery, patients in the EA group walked further than those in the DA group ($P = 0.03$) and required less assistance to transfer ($P = 0.009$) and negotiate a step ($P = 0.23$). Patients in the EA group were more likely to be discharged directly home from the acute care than those in the DA group (26.3 compared with 2.4%) and less likely to need high-level care (36.8 compared with 56%). A failed early ambulation subgroup had significantly more postoperative cardiovascular instability and worse results for all outcome measures.

Conclusion: EA after hip fracture surgery accelerates functional recovery and is associated with more discharges directly home and less to high-level care.

Key words: early ambulation, hip fracture, recovery outcome.

Abbreviations: DA, delayed ambulation; EA, early ambulation; FEA, failed early ambulation; ILOA, Iowa level of assistance; SOOB, sit out of bed; TEA, true early ambulation.

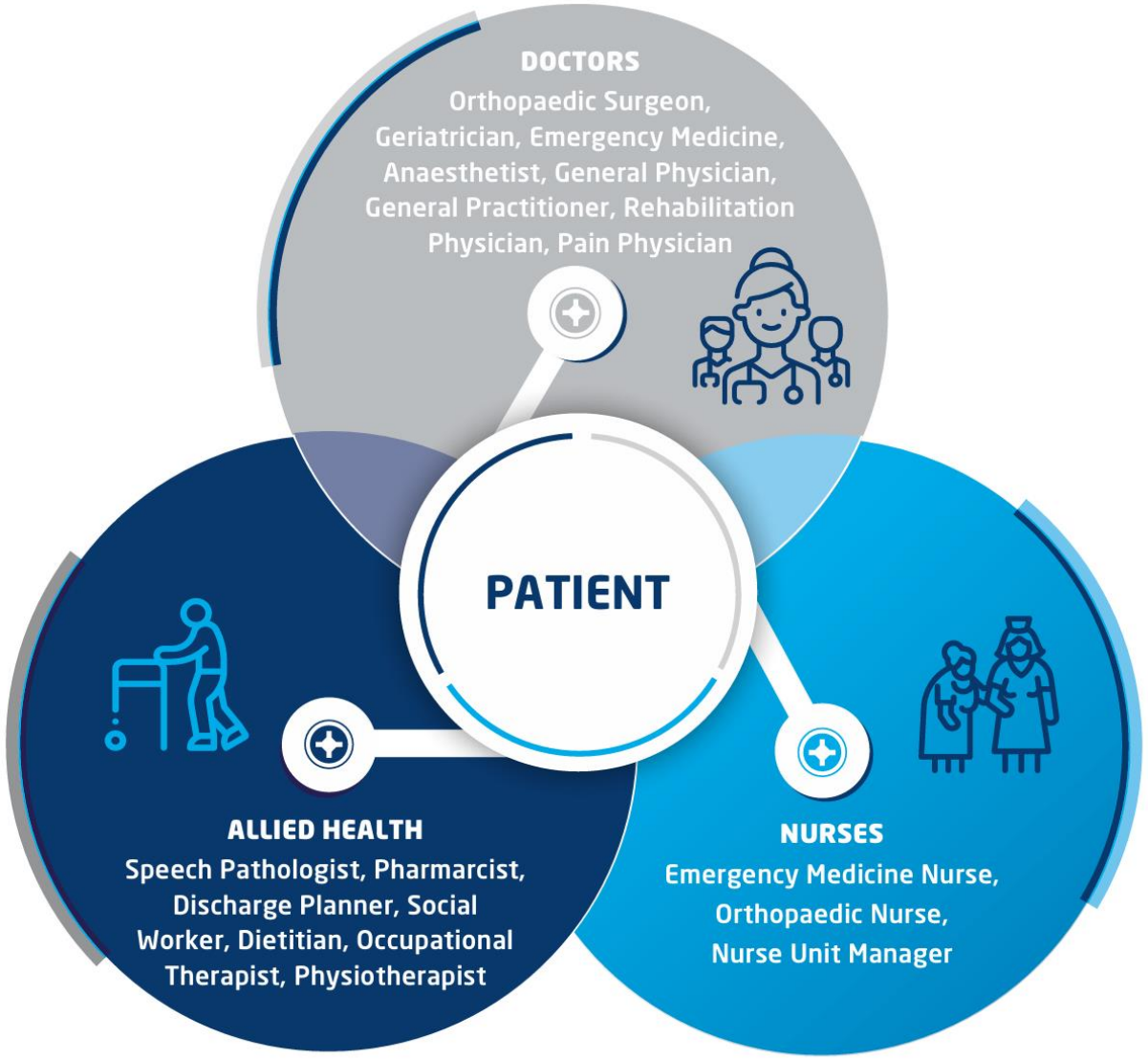
Challenges to Day 1 Walking

- Expectations from Physios
- Expectations from the patients/Whanau

- Weekend physio
- Safety
- Experience

- Pain
- Delerium
- BP
- Haemoglobin
- Nausea/vomiting

The thigh bone’s connected to the hip bone



Facilitating Day 1 walking

- No longer requiring day 1 post op Xray
- Good weightbearing status documentations
- AHA – PHIF
- Timing with Nursing Staff

- Physio expectation/education/experience
- Data collection

Conclusion

- Domino Effect
- Expectation
- Education
- Data Collection

- **“It is not in numbers but in unity, that our great strength lies”**

- Thomas Paine

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